

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Robert Kowert (Reg. no. 39,255) on 3/26/2010.

Examiner Amendments

The application has been amended as follows:

1. (Currently amended) A system, comprising:

a plurality of computer systems, each comprising a non-transitory computer readable storage medium;

a first node of a distributed store provided from one of the plurality of computer systems,

wherein the first node stores ~~comprising~~ a primary state of session data

configured for access by a plurality of application servers,

wherein the session data provides state information for each of a plurality of sessions,

wherein each session involves a plurality of application level interactions

between a client and one or more of the plurality of application servers,

wherein for each session the session data indicates the state of the application level interactions between the client and the one or more application servers for that session, and

wherein the session data comprises a current version of a plurality of attributes;

another node provided from another one of the plurality of computer systems, wherein the another node stores ~~comprising~~ a back-up instance of the primary state,

wherein the back-up instance of the primary state comprises a back-up version of the plurality of attributes in the session data of the primary state;

wherein during operation one or more of the plurality of computer systems ~~is configured to:~~

~~compares~~ the primary state to a benchmark version of the primary state to determine one or more of the attributes of the session data that have been modified in the current version of the plurality of attributes in the primary state,

wherein the benchmark version of the primary state comprises a previous version of the plurality of attributes in the session data of the primary state, and

wherein the benchmark version is separate from the back-up instance;

and

synchronizes_u the back-up version of the plurality of attributes in the back-up instance of the primary state on the other node with the current version of the plurality of attributes in the primary state,

wherein, to synchronize the back-up version of the plurality of attributes in the back-up instance of the primary state on the other node with the current version of the plurality of attributes in the primary state, one or more of the computer systems ~~is configured to:~~

sends_u the determined one or more of the attributes of the session data that have been modified to the other node as modified attributes of the session data,

wherein unmodified attributes of the session data are not sent to the other node; and

updates_u respective attributes in the plurality of attributes in the back-up instance of the primary state according to the modified attributes.

2. (Previously presented) The system as recited in claim 1, wherein, to compare the primary state to the benchmark version of the primary state, the system is further configured to perform binary differencing of a binary representation of the primary state and a binary representation of the benchmark version of the primary state to determine the modified attributes, wherein, to perform said binary differencing, the system is configured to iteratively compare n-bit portions of the binary

representation of the primary state to corresponding n-bit portions of the binary representation of the benchmark version of the primary state to determine which attributes differ between the primary state and the benchmark of the primary state, wherein n is a positive integer.

3. (Canceled)

4. (Currently amended) The system as recited in claim 1, wherein, to compare the primary state to ~~the~~ the benchmark version of the primary state, the system is further configured to perform object graph differencing of an object graph representation of the primary state and an object graph representation of the benchmark version of the primary state to determine the modified attributes, wherein the object graph representation of the primary state is a directed graph representation of the current version of the plurality of attributes in the primary state, wherein the object graph representation of the benchmark version of the primary state is a directed graph representation of the previous version of the plurality of attributes in the benchmark version of the primary state.

5. (Previously presented) The system as recited in claim 4, wherein, to perform object graph differencing, the system is further configured to compare structure of the directed graph representation of the current version of the plurality of attributes in

the primary state to structure of the directed graph representation of the previous version of the plurality of attributes in the benchmark version of the primary state to identify one or more differences between the primary state and the benchmark version of the primary state, wherein the differences between the primary state and the benchmark version of the primary state correspond to the one or more of the attributes of the session data that have been modified in the current version of the plurality of attributes in the primary state.

6. (Previously presented) The system as recited in claim 1, wherein the another node comprising the back-up instance of the primary state is another node of the distributed store.

7. (Currently amended) A system comprising:

a plurality of computer systems, each comprising a non-transitory computer readable storage medium;

a distributed store node provided from one of the plurality of computer systems, wherein the distributed store node stores ~~comprising~~ a primary state of session data configured for access by a plurality of application servers,
wherein the session data provides state information for each of a plurality of sessions,

wherein each session involves a plurality of application level interactions
between a client and one or more of the plurality of application servers,
wherein for each session the session data indicates the state of the
application level interactions between the client and the one or more
application servers for that session, and

wherein the session data comprises a current version of a plurality of attributes,
wherein the plurality of attributes include mutable attributes and immutable
attributes;

another node provided from another one of the plurality of computer systems, wherein
the another node stores ~~comprising~~ a back-up instance of the primary state,

wherein the back-up instance of the primary state comprises a back-up version of
the plurality of attributes in the session data of the primary state;

wherein during operation one or more of the plurality of computer systems ~~is configured~~
~~to~~:

determines a set of attributes that includes the mutable attributes and does not
include the immutable attributes; and

synchronizes the back-up version of the plurality of attributes in the back-up
instance of the primary state on the other node with the current version of
the plurality of attributes in the primary state,

wherein only the ~~the~~ attributes in the set of attributes are used in said
synchronization;

wherein, to synchronize the back-up version of the plurality of attributes in the back-up instance of the primary state on the other node with the current version of the plurality of attributes in the primary state, one or more of the computer systems ~~is configured to:~~

determines one or more of the attributes of the session data that have been modified in the current version of the plurality of attributes in the primary state,

wherein, to determine one or more of the attributes of the session data that have been modified in the current version of the plurality of attributes in the primary state, one or more of the computer systems compares a current version of the set of attributes in the primary state to a previous version of the set of attributes in a benchmark version of the primary state,

wherein the benchmark version of the primary state comprises a previous version of the plurality of attributes in the session data of the primary state, and

wherein the benchmark version is separate from the back-up version;

sends the one or more of the attributes of the session data that have been modified to the other node as modified attributes of the session data, wherein unmodified attributes of the session data are not sent to the other node; and updates respective attributes in the plurality of attributes in the back-up instance of the primary state according to the received modified attributes of the session data.

8. (Canceled)

9. (Currently amended) The system as recited in claim [[8]] Z, wherein, to compare [[a]] the current version of the set of attributes in the primary state to [[a]] the previous version of the set of attributes in [[a]] the benchmark version of the primary state, the system is further configured to perform binary differencing of a binary representation of the primary state and a binary representation of the benchmark version of the primary state to determine the modified attributes, wherein, to perform said binary differencing, the system is configured to iteratively compare n-bit portions of the binary representation of the primary state to corresponding n-bit portions of the binary representation of the benchmark version of the primary

state to determine which attributes differ between the primary state and the benchmark of the primary state, wherein n is a positive integer.

10. (Currently amended) The system as recited in claim [[8]] 7, wherein, to compare [[a]] the current version of the set of attributes in the primary state to [[a]] the previous version of the set of attributes in [[a]] the benchmark version of the primary state, the system is further configured to perform object graph differencing of an object graph representation of the primary state and an object graph representation of the benchmark version of the primary state to determine the modified attributes, wherein the object graph representation of the primary state is a directed graph representation of the current version of the plurality of attributes in the primary state, wherein the object graph representation of the benchmark version of the primary state is a directed graph representation of the previous version of the plurality of attributes in the benchmark version of the primary state.

11. (Currently amended) A system comprising:

a plurality of computer systems, each comprising a non-transitory computer readable storage medium;

a distributed store node provided from one of the plurality of computer systems, wherein
the distributed store node stores comprising a primary state of session data
configured for access by a plurality of application servers,
wherein the session data provides state information for each of a plurality of
sessions,
wherein each session involves a plurality of application level interactions
between a client and one or more of the plurality of application servers,
wherein for each session the session data indicates the state of the application
level interactions between the client and the one or more application
servers for that session, and
wherein the session data comprises a current version of a plurality of attributes;
another node provided from another one of the plurality of computer systems, wherein
the another node stores comprising another instance of the primary state,
wherein the other instance of the primary state comprises a different version of
the plurality of attributes in the session data of the primary state;
means for determining a set of the attributes of the session data that differ between the
primary state and the other instance of the primary state,
wherein the means for determining a set of the attributes comprise means for
comparing the primary state to a benchmark version of the primary state
to determine attributes of the session data that have been modified in the
current version of the plurality of attributes in the primary state.

wherein the benchmark version of the primary state comprises a previous version of the plurality of attributes in the session data of the primary state, and wherein the benchmark version is separate from the other instance of the primary state; and

means for synchronizing the version of the plurality of attributes in the other instance of the primary state with the current version of the plurality of attributes in the primary state,

wherein said means for synchronizing comprise means for sending the determined set of the attributes of the session data to the other node as modified attributes of the session data,

wherein unmodified attributes of the session data are not sent to the other node, and

means for updating respective attributes in the plurality of attributes in the other instance of the primary state according to the set of attributes.

12. (Canceled)

13. (Currently amended) The system as recited in claim ~~[[12]]~~ 11, wherein said means for comparing the primary state to a benchmark version of the primary state comprises means for performing binary differencing of a binary representation of

the primary state and a binary representation of the benchmark version of the primary state to determine the modified attributes, wherein, to perform said binary differencing, the system is configured to iteratively compare n-bit portions of the binary representation of the primary state to corresponding n-bit portions of the binary representation of the benchmark version of the primary state to determine which attributes differ between the primary state and the benchmark of the primary state, wherein n is a positive integer.

14. (Currently amended) The system as recited in claim ~~[[12]]~~ 11, wherein said means for comparing the primary state to a benchmark version of the primary state comprises means for performing object graph differencing of an object graph representation of the primary state and an object graph representation of the benchmark version of the primary state to locate the modified attributes, wherein the object graph representation of the primary state is a directed graph representation of the current version of the plurality of attributes in the primary state, wherein the object graph representation of the benchmark version of the primary state is a directed graph representation of the previous version of the plurality of attributes in the benchmark version of the primary state.

15. (Currently amended) A method, comprising:

providing, by one or more computer systems each comprising a processor, access to a primary state of session data ~~comprised~~ stored by a distributed store node to a plurality of application servers,

wherein the session data provides state information for each of a plurality of sessions,

wherein each session involves a plurality of application level interactions between a client and one or more of the plurality of application servers,

wherein for each session the session data indicates the state of the application level interactions between the client and the one or more application servers for that session, and

wherein the session data comprises a current version of a plurality of attributes;

comparing, by one or more computer systems each comprising a processor, the primary state to a benchmark version of the primary state to determine one or more of the attributes of the session data that have been modified in the current version of the plurality of attributes in the primary state,

wherein the benchmark version of the primary state comprises a previous version of the plurality of attributes in the session data of the primary state; and

synchronizing, by one or more computer systems each comprising a processor, a different version of the plurality of attributes in another instance of the primary state on ~~[[the]]~~ another node with the current version of the plurality of attributes in the primary state.

wherein the other node is provided by a different computer system than the distributed store node, and

wherein the benchmark version is separate from the other instance of the primary state;

wherein said synchronizing comprises:

sending the determined one or more of the attributes of the session data that have been modified to another node as modified attributes of the session data,

wherein unmodified attributes of the session data are not sent to the other node; and

updating respective attributes in the plurality of attributes in the other instance of the primary state according to the received modified attributes.

16. (Currently amended) The method as recited in claim 15, wherein said comparing the primary state to ~~the~~ the benchmark version of the primary state comprises performing binary differencing of a binary representation of the primary state and a binary representation of the benchmark version of the primary state to determine the modified attributes, wherein said performing binary differencing comprises iteratively comparing n-bit portions of the binary representation of the primary state to corresponding n-bit portions of the binary representation of the benchmark version of the primary state to determine which attributes differ

between the primary state and the benchmark of the primary state, wherein n is a positive integer.

17. (Canceled)

18. (Currently amended) The method as recited in claim 15, wherein said comparing the primary state to ~~[[a]]~~ the benchmark version of the primary state comprises performing object graph differencing of an object graph representation of the primary state and an object graph representation of the benchmark version of the primary state to determine the modified attributes, wherein the object graph representation of the primary state is a directed graph representation of the current version of the plurality of attributes in the primary state, wherein the object graph representation of the benchmark version of the primary state is a directed graph representation of the previous version of the plurality of attributes in the benchmark version of the primary state.

19. (Previously presented) The method as recited in claim 18, wherein performing object graph differencing comprises comparing structure of the directed graph representation of the current version of the plurality of attributes in the primary state to structure of the directed graph representation of the previous version of the plurality of attributes in the benchmark version of the primary state to identify

one or more differences between the primary state and the benchmark version of the primary state, wherein the differences between the primary state and the benchmark version of the primary state correspond to the one or more of the attributes of the session data that have been modified in the current version of the plurality of attributes in the primary state.

20. (Original) The method as recited in claim 15, wherein the other instance of the primary state is a backup of the primary state.

21. (Currently amended) A ~~tangible~~ non-transitory computer ~~accessible~~ readable storage medium, ~~comprising storing~~ software instructions ~~executable to that~~ when executed by one or more processors implement:

providing access to a primary state of session data ~~comprised~~ stored by a distributed store node to a plurality of application servers,

wherein the session data provides state information for each of a plurality of sessions,

wherein each session involves a plurality of application level interactions

between a client and one or more of the plurality of application servers,

wherein for each session the session data indicates the state of the application

level interactions between the client and the one or more application

servers for that session, and

wherein the session data comprises a current version of a plurality of attributes;
comparing the primary state to a benchmark version of the primary state to determine one or more of the attributes of the session data that have been modified in the current version of the plurality of attributes in the primary state,
wherein the benchmark version of the primary state comprises a previous version of the plurality of attributes in the session data of the primary state; and
synchronizing a different version of the plurality of attributes in another instance of the primary state on [[the]] another node with the current version of the plurality of attributes in the primary state,
wherein the other node is provided by a different computer system than the distributed store node, and
wherein the benchmark version is separate from the other instance of the primary state;
wherein, in said synchronizing, the software instructions are executable to implement:
sending the determined one or more of the attributes of the session data that have been modified to another node as modified attributes of the session data,
wherein unmodified attributes of the session data are not sent to the other node; and

updating respective attributes in the plurality of attributes in the other instance of the primary state according to the received modified attributes.

22. (Currently amended) The non-transitory computer ~~accessible~~ readable storage medium as recited in claim 21, wherein[[, in]] said comparing the primary state to [[a]] the benchmark version of the primary state,~~the software instructions are executable to implement~~ comprises performing binary differencing of a binary representation of the primary state and a binary representation of the benchmark version of the primary state to determine the modified attributes, wherein said performing binary differencing comprises iteratively comparing n-bit portions of the binary representation of the primary state to corresponding n-bit portions of the binary representation of the benchmark version of the primary state to determine which attributes differ between the primary state and the benchmark of the primary state, wherein n is a positive integer.

23. (Canceled)

24. (Currently amended) The non-transitory computer ~~accessible~~ readable storage medium as recited in claim 21, wherein[[, in]] said comparing the primary state to [[a]] the benchmark version of the primary state,~~the software instructions are executable to implement~~ comprises performing object graph differencing of an

object graph representation of the primary state and an object graph representation of the benchmark version of the primary state to determine the modified attributes, wherein the object graph representation of the primary state is a directed graph representation of the current version of the plurality of attributes in the primary state, wherein the object graph representation of the benchmark version of the primary state is a directed graph representation of the previous version of the plurality of attributes in the benchmark version of the primary state.

25. (Currently amended) The non-transitory computer ~~accessible~~ readable storage medium as recited in claim 24, wherein[[, in]] said performing object graph differencing, ~~the software instructions are executable to implement~~ comprises comparing structure of the directed graph representation of the current version of the plurality of attributes in the primary state to structure of the directed graph representation of the previous version of the plurality of attributes in the benchmark version of the primary state to identify one or more differences between the primary state and the benchmark version of the primary state, wherein the differences between the primary state and the benchmark version of the primary state correspond to the one or more of the attributes of the session data that have been modified in the current version of the plurality of attributes in the primary state.

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26. (Currently amended) The non-transitory computer ~~accessible~~ readable storage medium as recited in claim 21, wherein the other instance of the primary state is a backup of the primary state.

Reasons for Allowance

2. The following is an examiner's statement of reasons for allowance:
3. The closest prior art of record, US 2002/0165961 to Everdell, discloses many features of the instant claims (see the Appeal decision mailed 11/19/2008). Everdell is specifically drawn towards a method and apparatus that improves transmissions of control information between network devices (Everdell: Abstract). The information of Everdell is specifically configuration information of the network elements (Everdell: Paragraph [0125]). Thus, Everdell fails to disclose the details concerning the session data contained in the primary state. Further, Everdell fails to disclose details pertaining to the comparison of the primary state to a benchmark version in order to determine parameters to be transmitted to update a different back-up version, where only the difference between the primary state and the benchmark version are sent to the node storing the backup version. Further, no other prior art of record appears to fairly teach or suggest modifying Everdell in such a way as to perform each limitation of the instant claim in as much detail as is required.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Christensen whose telephone number is (571)270-1144. The examiner can normally be reached on Monday through Thursday 6:30AM - 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Vaughn can be reached on (571) 272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. C./
Examiner, Art Unit 2444
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Supervisory Patent Examiner, Art Unit 2444